SIEMENS

ARCADIS / SIREMOBIL

SP

Installation and Startup

Option

Integrated laser light localizer (single-tank side)

These instructions apply to the installation and start-up of the laser light localizer 3779001 on the products SIREMOBIL Compact L and SIREMOBIL Iso-C, and the laser light localizer 8079720 on the products ARCADIS Varic and ARCADIS Orbic.

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Print No.: SP00-000.814.08.01.02
Replaces: n.a.

English
Doc. Gen. Date: 03.06

Document revision level

The document corresponds to the version/revision level effective at the time of system delivery. Revisions to hardcopy documentation are not automatically distributed.

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Notes and symbols

Emphasized text in this technical documentation has the following meanings:

⚠DANGER	**DANGER indicates when there is an immediate danger that l e a d s to death or serious physical injury.**
⚠WARNING	**WARNING indicates a risk of danger that m a y l e a d to death or serious physical injury.**
⚠ CAUTION	**CAUTION used with the safety alert symbol indicates a risk of danger that leads to slight or moderate physical injury and/ or damage to property.**
NOTICE	**NOTICE used without the safety alert symbol indicates a risk of danger that if disregarded leads or may lead to a potential situation which may result in an undesirable result or state other than death, physical injury or property damage.**

Fig. 1: Danger notices

Information on the protective conductor resistance test

Observe the instructions in the "Safety Rules for Installation and Repair" (ARTD-002.731.17 ...).

The protective conductor resistance must be measured after every intervention in the system.

However, documentation of the measured values is required only during periodic safety checks.

If parts or components that can significantly influence the protective conductor resistance (e.g., replacement of the power cable, replacement of the power-up module, replacement of multi-pole connection cables that also create the protective conductor connection between system parts (e.g., monitor cable or C-arm cable)) are replaced or if protective conductor connections have been repaired, the protective conductor resistance must be measured. The values must be documented and assessed in the protective conductor resistance report.

NOTE

For evaluation purposes, the first measured value and the values documented during previous maintenance or safety checks must be compared to the measured values. A sudden or unexpected increase in the measured values may indicate a defect in the protective conductor connections - even if the limit value of 0.2 ohms is not exceeded. (Protective conductor or contacts).

The measurement must be performed in accordance with DIN VDE 0751, Part 1 (refer to ARTD Part 2). The protective conductor resistance for all touchable conductive parts must be measured during the normal operating state of the system.

Make sure that control cables or data cables between the components of the system are not mistaken for protective conductor connections.

During the measurement, the power cable and additional connection cables that also create the protective conductor connection between system parts (e.g. monitor cable between the basic unit and monitor trolley) must be moved section by section to detect cable breaks.

The protective conductor resistance must not exceed 0.2 ohms.

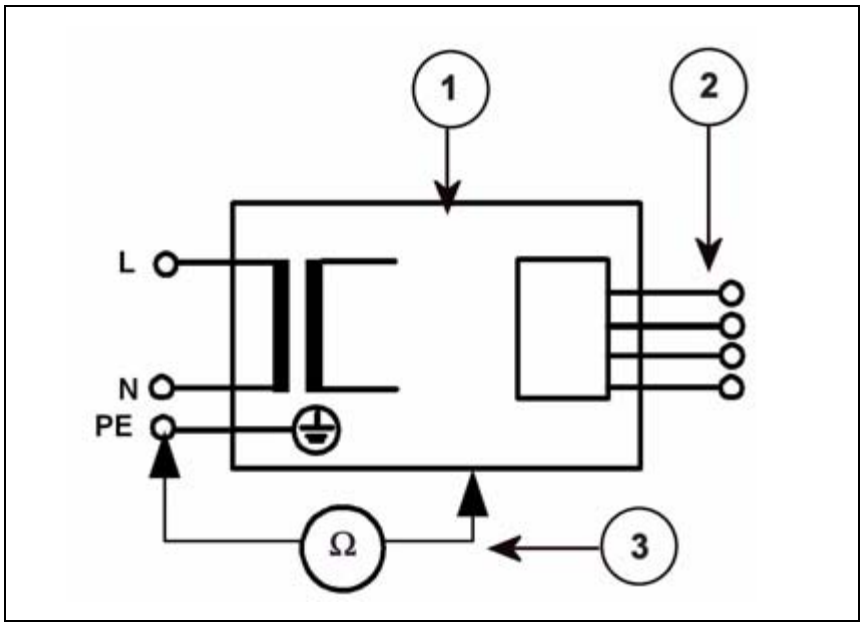

Fig. 2: Measuring circuit for measuring the protective conductor resistance for units that are disconnected from power, in compliance with DIN VDE 0751-1/2001-10, Fig. C2.

Pos. 1 = System

Pos. 2 = Application part type B (if present)

Pos. 3 = Measurement setup (integrated into measuring device)

Laser light localizer

⚠CAUTION

Laser emissions!

This product contains class 2 lasers. (USA: Laser class 2)

Disregarding safety precautions can lead to bodily injury, especially to the retina of the eye, resulting in irreversible damage to vision.

- ➪ **Observe the safety information in ARTD-002.731.03... When working with the laser light localizer, do not look directly into the laser beam.**

NOTE

Laser emissions!

There is no direct hazard to the eye (blinking reflex). Nevertheless do not look directly into the laser beam.

Identification and warning labels

USA:

Fig. 3: Laser class pictogram

Fig. 4: Certification label

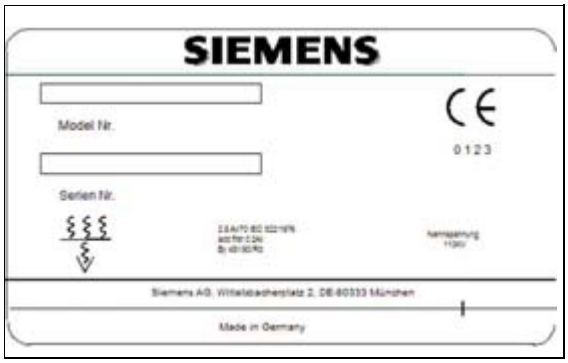

Fig. 5: Identification label

SECOND SET OF LABELS LASER

Fig. 6: Label

LASER APERTURE

Fig. 7: Laser aperture label

Labels for all other countries:

Warning label according to IEC 825

Fig. 8: Warning label according to IEC 825

(use local language)

Fig. 9: Warnschilder nach IEC 825

Identification label:

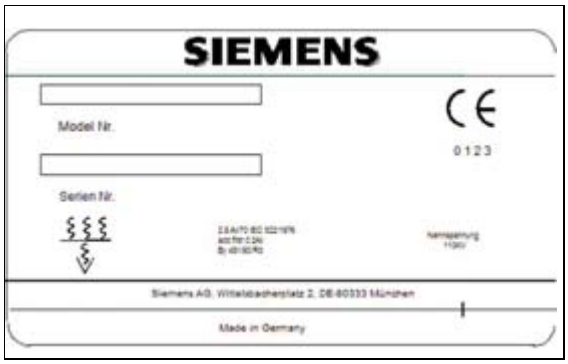

Fig. 10: Identification label

SECOND SET OF LABELS
LASER

Fig. 11: Label

Required parts and auxiliary devices

Parts

ARCADIS Varic/Orbic: Complete laser light localizer	80 79 720
SIREMOBIL Compact L / Iso-C: Complete laser light localizer	37 79 001

NOTE

As of April 2006, the 03779001 and 08079720 laser light localizers are no longer designed for distal locked nailing. Accordingly, the parts used to perform a locked nailing, the I.I. attachments, and the adjustment mechanism for adjusting the laser beams to the central beam of the X-ray tube have been removed from the kit and are no longer included in the delivery volume of the laser light localizer. The adjustment of the laser beams to the central beam is no longer necessary. After this time, this document replaces the previous documents RXR2-130.812.01.., RXR2-130.815.01.., SPR2-230.812.03.. and SPR2-230.815.02... .

Auxiliary tools

- Service PC (only for SIREMOBIL Compact and SIREMOBIL Iso-C)
- Toolbox (including Allen key)
- Sealing compound, material no. 02049716

Removing the cover

- Disconnect the system power plug.
- Remove the cover plate from the basic unit.
- Unscrew the SIREPHOS cover, carefully loosening the bonding surfaces on the long sides of the cover.

NOTE

After the laser light localizer has been installed, caulk the SIREPHOS cover again with sealing compound. Use sealing compound 2049716.

SIREMOBIL Compact L and ARCADIS Varic

NOTE

Skip this section if a SIREMOBIL Iso-C or an ARCADIS Orbic is present. Continue with the section "SIREMOBIL Iso-C and ARCADIS Orbic".

Wiring on the SIREPHOS

- Loosen and remove the cover from the tube collimator.
- Route the spare leads (white and gray) up and out through the back.
- Replace the cover of the tube collimator.

Installing the localizer unit on the SIREPHOS

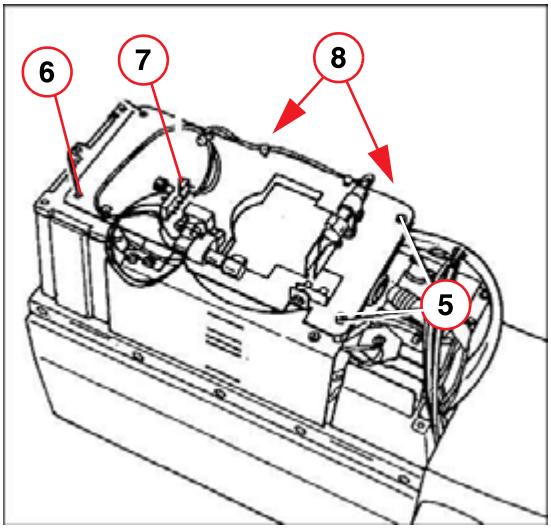

Fig. 12: SIREPHOS localizer unit

Pos. 5 Screws
Pos. 6 Threaded holes
Pos. 7 Solder terminal
Pos. 8 Cable ties

- Loosen the screw (5/Fig. 12 / p. 12).
- Without Diamentor:
  - Take the bolts provided and screw them into the threaded holes.
- With Diamentor:
  - Place the supplied spacers between the Diamentor and localizer unit.
- Place the spacers provided over the threaded holes (6/Fig. 12 / p. 12).
- Attach the localizer unit (Fig. 12 / p. 12) and secure it to the SIREPHOS using 4 screws. (5/Fig. 12 / p. 12)(6/Fig. 12 / p. 12)
- Solder the white spare lead to solder tag strip X55.1 or clip it to terminal X55.1.

- Solder the gray spare lead to solder tag strip X55.4 or clip it to terminal X55.4.
- Secure the two spare leads with cable ties.

Affixing the identification labels for the U.S.A.

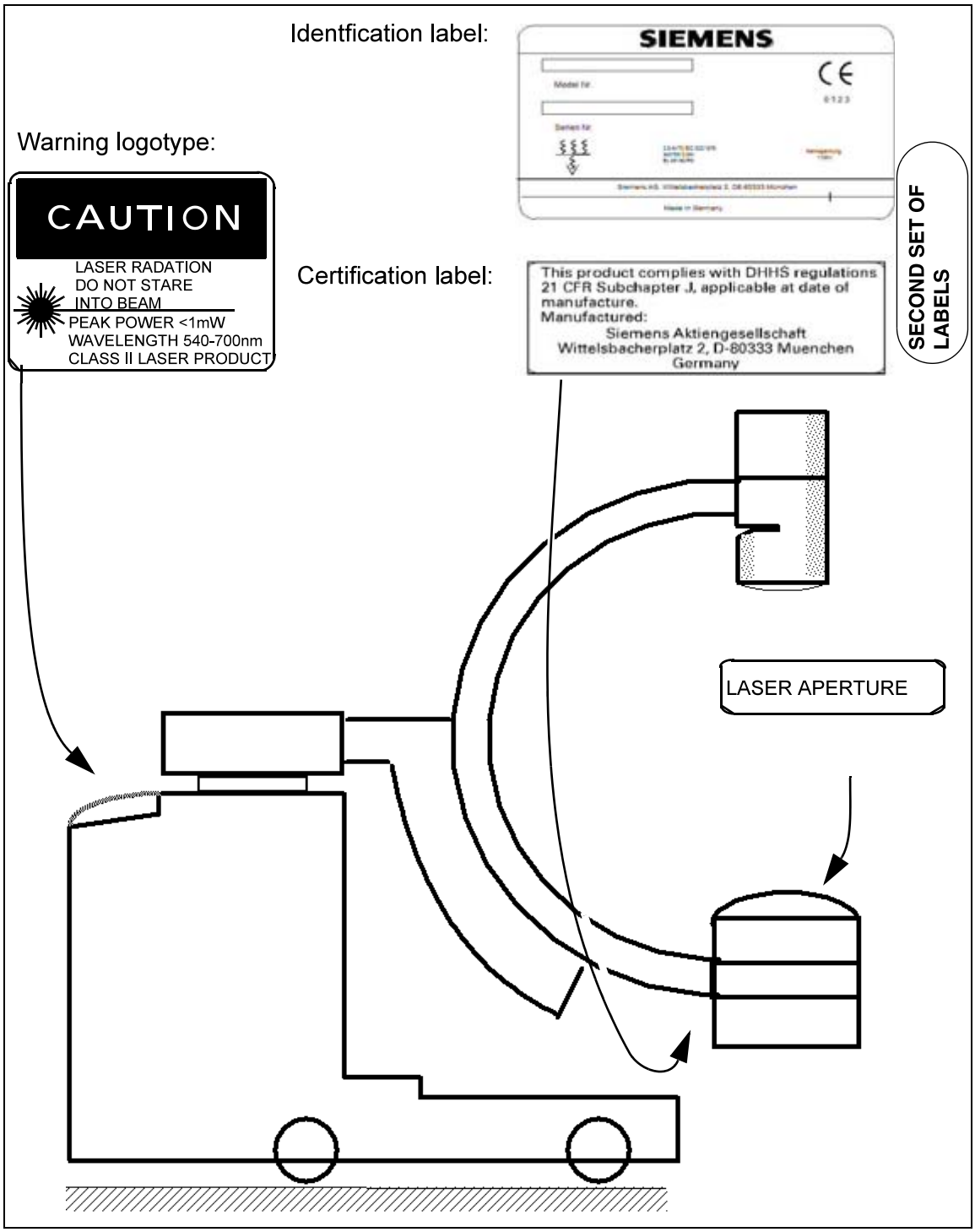

Fig. 13: Checking the identification labels

- Affix the identification labels provided (Fig. 13 / p. 13) (Fig. 14 / p. 14).

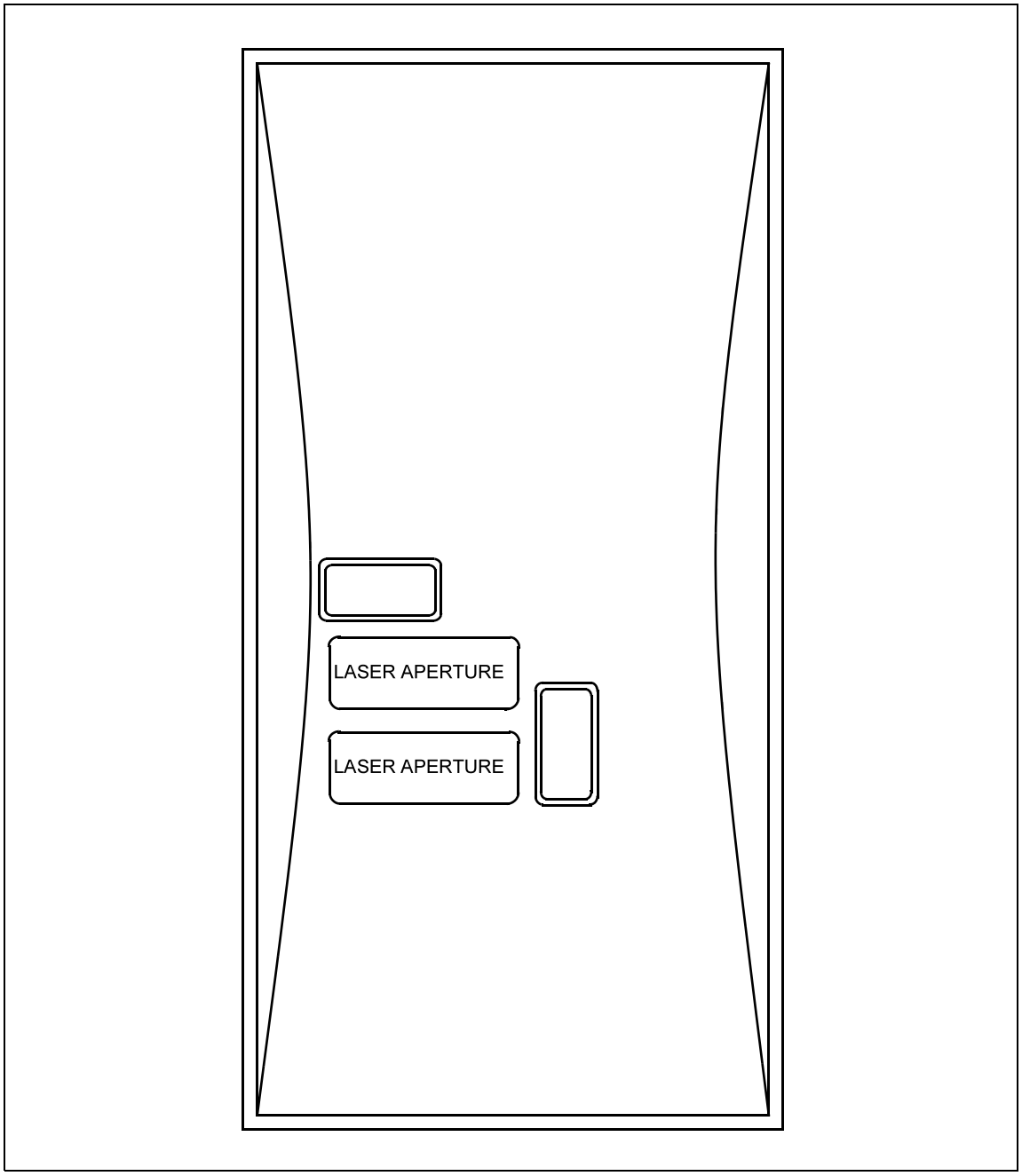

Fig. 14: Label for C-arm side

- Affix the identification label, "class 2 laser" warning logo type, DHHS certification label, and the two laser aperture labels.

Affixing the identification labels for Great Britain and other countries

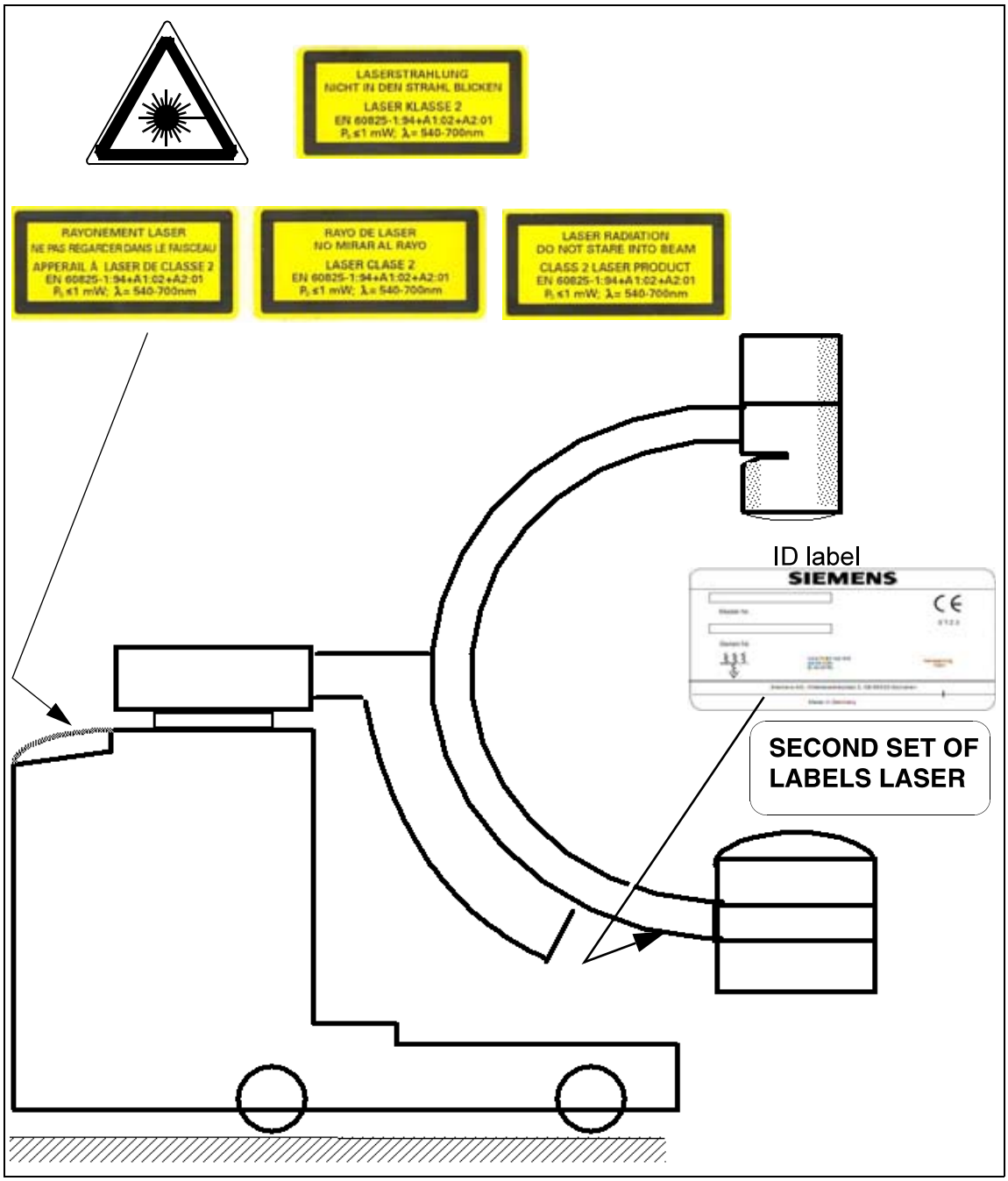

Fig. 15: Affixing the warning labels

- Affix the identification labels provided so that they are clearly visible, as shown in (Fig. 15 / p. 15) (other countries).

Great Britain:	Affix the warning label in accordance with IEC 825 (text) in the local language, the warning label in accordance with IEC 825 (symbol), and the identification label. Also affix laser aperture labels (Fig. 14 / p. 14).
Other countries:	Affix the warning label in accordance with IEC 825 (text) in the local language, the warning label in accordance with IEC 825 (symbol), and the identification label.

SIREMOBIL Iso-C and ARCADIS Orbic

NOTE

Skip this section if a SIREMOBIL Compact L or an ARCADIS Varic is present. Continue with the "Configuration" chapter.

Wiring on the SIREPHOS

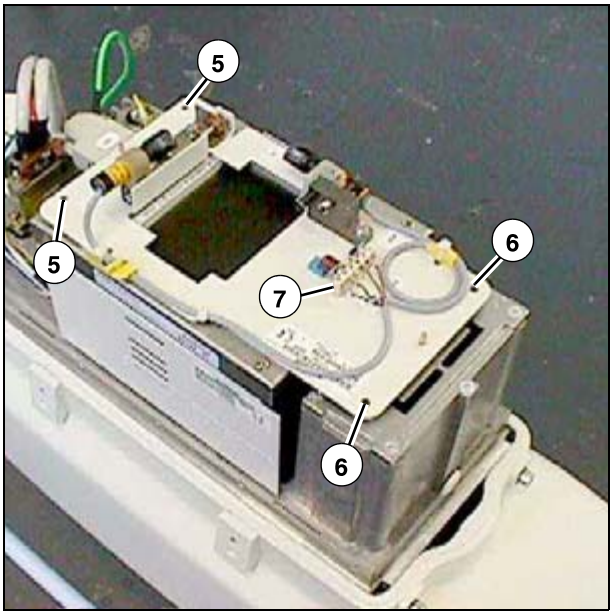

Fig. 16: Installation of the localizer unit

- Loosen and remove the cover from the tube collimator.
- Route the spare leads (white and gray) up and out through the back.
- Replace the cover of the tube collimator.

Installing the localizer unit on the SIREPHOS

- Loosen the screw (5/Fig. 16 / p. 17).
- Without Diamentor:
  - Take the bolts provided and screw them into the threaded holes.
- With Diamentor:
  - Place the supplied spacers between the Diamentor and localizer unit.
- Place the spacers provided over the threaded holes (6/Fig. 16 / p. 17).
- Install the localizer unit as shown in (Fig. 16 / p. 17) and secure it with 4 screws to the SIREPHOS (5 und 6/Fig. 16 / p. 17).
- Solder the white spare lead to solder tag strip X55.1 or clip it to terminal X55.1.
- Solder the gray spare lead to solder tag strip X55.4 or clip it to terminal X55.4.
- Secure the two spare leads with cable ties.

Affixing the identification labels for the U.S.A.

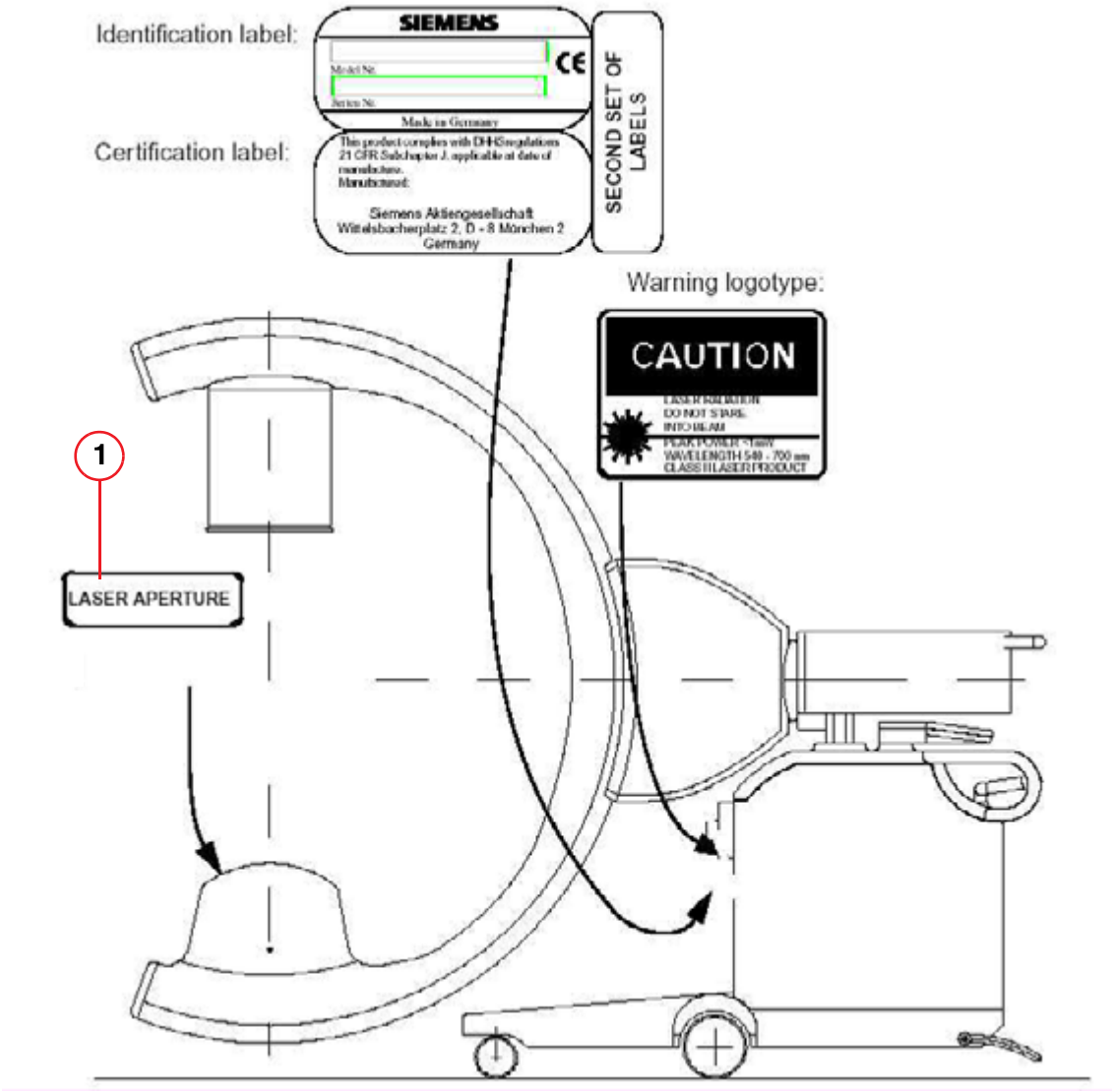

Fig. 17: Affixing identification labels for USA new

Pos. 1 See next figure (affix identification labels 2)

- Affix the identification labels provided so that they are clearly visible, as shown in (Fig. 17 / p. 18) and (Fig. 18 / p. 19).
  - Affix the identification label, "class 2 laser" warning logo type, DHHS certification label, and the two laser aperture labels.

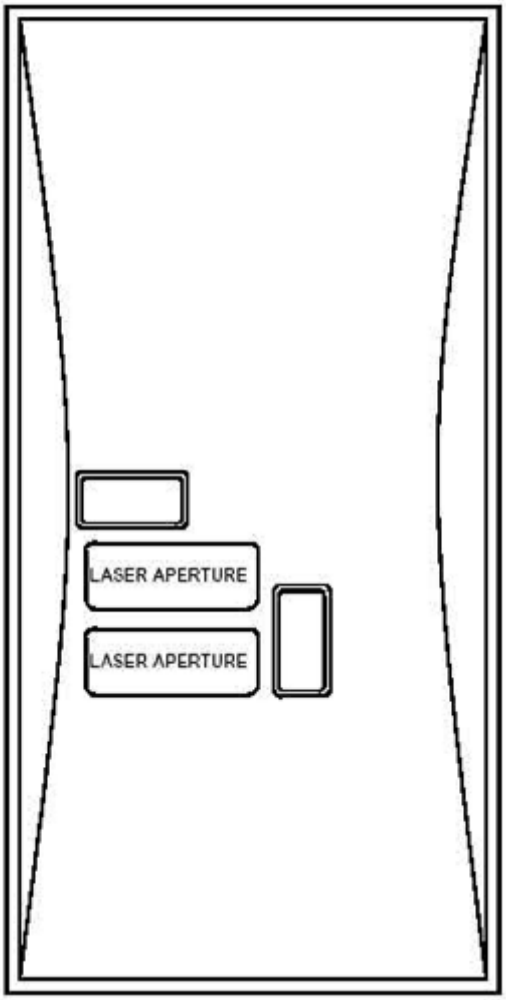

Fig. 18: Affixing identification labels 2

Affixing the identification labels for Great Britain and other countries

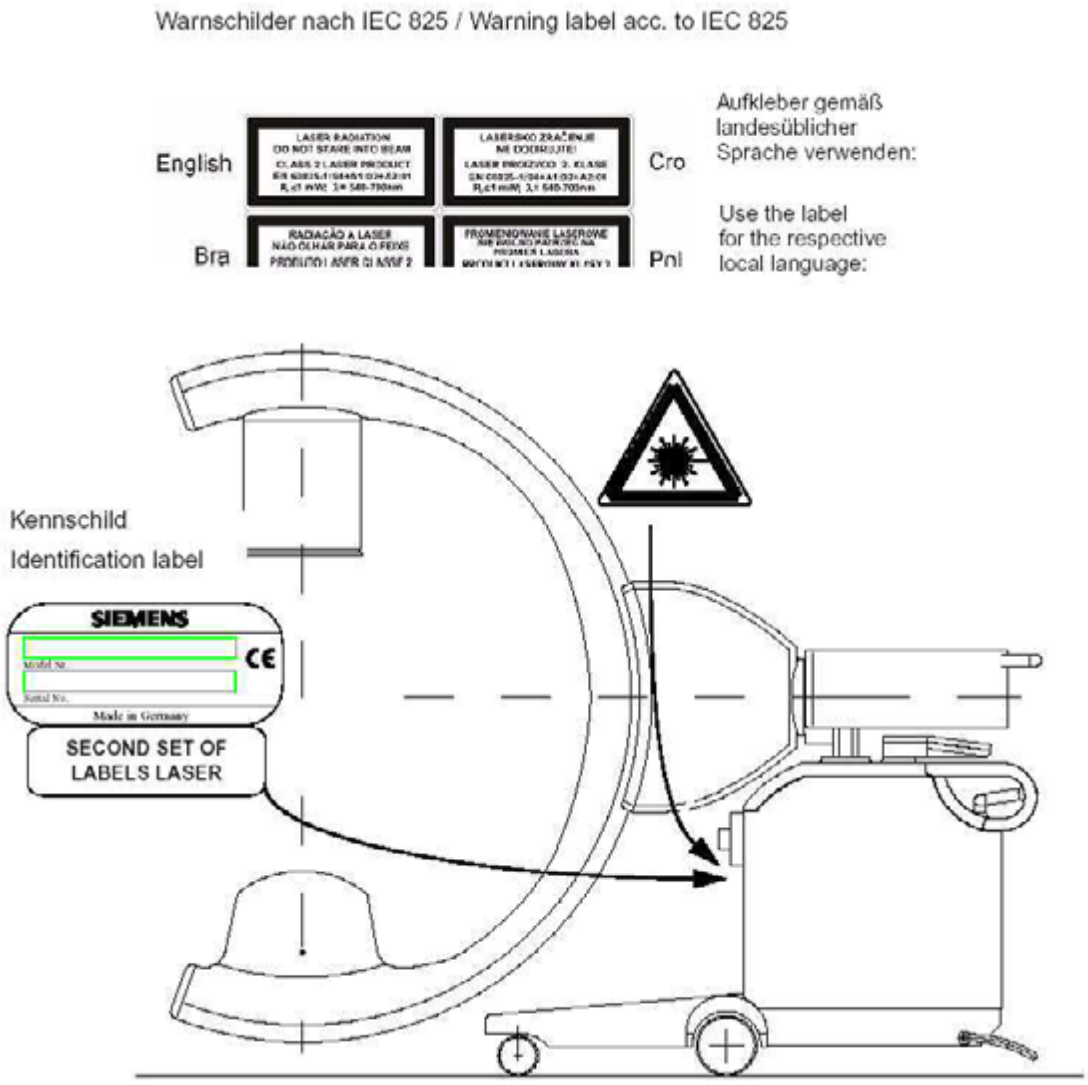

Fig. 19: Affixing the identification labels for GB and other countries

- Affix the identification labels provided so that they are clearly visible, as shown in (Fig. 19 / p. 20) (other countries).

Great Britain:	Affix the warning label in accordance with IEC 825 (text) in the local language, the warning label in accordance with IEC 825 (symbol), and the identification label. Also affix laser aperture labels (Fig. 18 / p. 19).
Other countries:	Affix the warning label in accordance with IEC 825 (text) in the local language, the warning label in accordance with IEC 825 (symbol), and the identification label.

SIREMOBIL Compact L and SIREMOBIL Iso-C

NOTE

Skip this section if a ARCADIS Varic or an ARCADIS Orbic is present. Continue with the section "ARCADIS Varic and ARCADIS Orbic".

- Connect the service PC to the serial interface of the SIREMOBIL.
- The service program must already be installed on the PC.
- Remove the service program floppy disk from the log book and insert it into drive A.
- Switch on the system.
- Switch on the service PC.
- Start the service program.
- Click "Get from Unit".
- Select "Laser" in the Adjustment, Parameters menu.
- Select **yes** for "Laser existing".
- Click "Set Value".
- Click "Put to unit".
- Wait for the system to boot.
- After the modification, back up the parameters (Data menu, Backup, Parameter).

ARCADIS Varic and ARCADIS Orbic

NOTE

Skip this section if a SIREMOBIL Compact L or an SIREMOBIL Iso-C is present. Continue with the chapter "Setting the laser and functional test".

- Log on to the service menu.
- Click <Main System>-<Configuration>-<Options>.
- Set "Laser Existing" to <yes> and click <Save>.
- After the modification, back up the parameters.

Setting the laser light fan beams

- Switch the system on.
- With the switch: on the control panel of the main unit, switch on the laser light localizer. The two laser diodes light up.

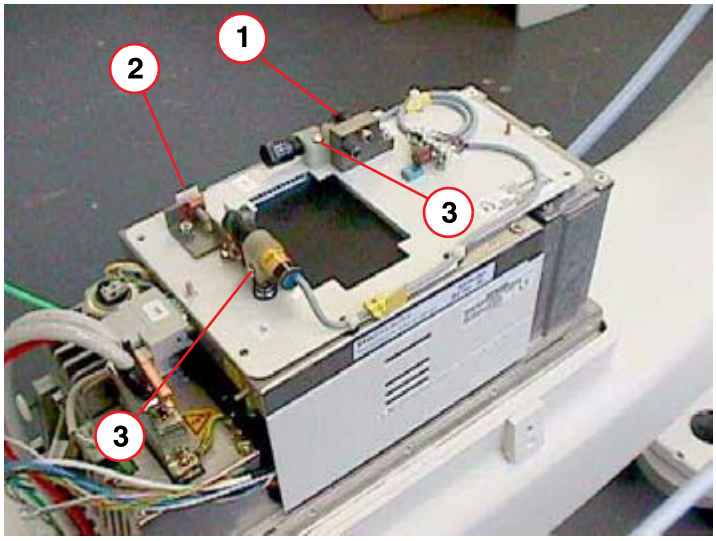

Fig. 20: Excentrics and screws

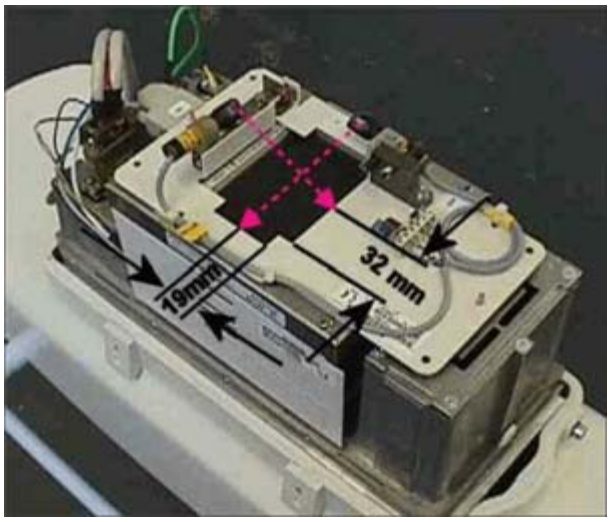

Fig. 21: Setting position of laser diodes

Positioning the laser diodes on the mechanical center.

NOTICE

To prevent damage to the laser diodes:

➪ **Do not turn the lenses of the laser diodes.**

- With the adjustment screws (1/Fig. 20 / p. 23) and (2/Fig. 20 / p. 23) set the laser diodes to the "zero" position.
  - ➪ The laser diodes lie horizontal to the chassis.
- Loosen the screws (3/Fig. 20 / p. 23) until the laser diodes can be turned in their holders and moved to the horizontal position.
- With a ruler, as shown in (Fig. 21 / p. 23), mark the mechanical centers for the two laser diodes.
  - ➪ Dimensions: 19 mm +/- 1mm and 32 mm +/- 1mm. See (Fig. 21 / p. 23)
- Turn the laser diodes in their holders until the laser light line is visible on the chassis of the laser light localizer. See the dashed lines in (Fig. 21 / p. 23).
- Move the laser diodes horizontally in their holders until the laser light line lies at the mechanical center (marked out previously).

NOTE

For the following adjustment, the laser diodes should only be turned, not moved horizontally, so that they remain in the mechanical center of the laser light localizer.

Adjusting the laser light fan beams on the image intensifier

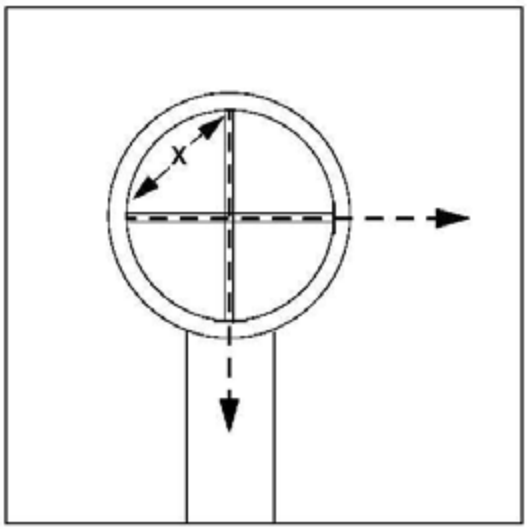

Fig. 22: Laser light fan beams

- Turn the diodes in their holders until the laser light fan beams are reflected on the I.I. input screen as shown in (Fig. 22 / p. 24). The laser light fan beams begin at (X/Fig. 22 / p. 24). This setting ensures that the laser light fan beams cross near the laser light localizer.
- Retighten the screws (3/Fig. 20 / p. 23).

Functional checks

NOTE

Repeat the functional checks described in this section when performing the annual system maintenance.

- The system is switched on.
- Test the function of the key on the operating console of the basic unit:
  - ➪ With the laser light localizer switched on, the two laser diodes and the LED in the key must light up.
- Check the function of the adjustment screws (3 /Fig. 20 / p. 23) for setting the laser diodes on the I.I.
  - ➪ You must be able to adjust the laser light fan beams to the center of the I.I. input screen.
- Test the automatic shut-off of the laser light localizer: Switch on the laser light localizer.
  - ➪ The two laser diodes must shut off automatically after about 5 minutes.

Covers

Housing

- Place the housing provided on the SIREPHOS.
- Caulk the housing with silicone to prevent the entry of fluids.
- Tighten the housing screws.

Note for U.S.A.:	Remove the spacer before using the laser light localizer.

Covers

- Close all covers again. Make sure that the protective conductor connections make good contact.

Protective conductor resistance test

NOTE

Observe the instructions for the protective conductor resistance test in the "Safety" chapter of these instructions.

- Perform the protective conductor test according to ARTD-002.731.17....
  - ➪ The protective conductor resistance must not exceed 0.2 ohms.

Operating instructions and customer information

- Place the operating instructions for the laser light localizer (if these were not already included in the previous operating instructions) into the system operating instructions.
- Explain to the customer the operation of the laser light localizer and hand over the operating instructions.

During the annual system maintenance, perform and document the functional checks described here: (Functional checks / p. 25). Check the labels as well. Replace any missing or illegible labels.